

Amendments to the Claims:

The following listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1-42 (Canceled)

43. (Currently amended) A method of lowering the amount of an endogenous endogenously produced substance in an extracellular fluid of a subject, comprising administering to the subject a chimeric protein comprising a functional domain and a carrier domain, wherein

the functional domain comprises a ligand-binding domain of a first receptor, wherein the ligand-binding domain binds an endogenous endogenously produced substance;

the carrier domain comprises an amino acid sequence which binds a mammalian cell surface receptor other than the first receptor,

such that the chimeric protein binds to the endogenous endogenously produced substance in the extracellular fluid of the subject and to the cell surface receptor on the cell, whereupon the cell surface receptor on the cell transports the chimeric protein and the endogenous endogenously produced substance into the cell, thereby lowering the amount of the endogenous endogenously produced substance in the extracellular fluid of a subject.

44. (Withdrawn) The method of claim 43, wherein the endogenous endogenously produced substance is a lipoprotein.

45. (Currently amended) The method of claim 43, wherein the endogenous endogenously produced substance is a naturally occurring metabolite.

46. (Currently Amended) The method of claim 43, wherein the endogenously produced substance ~~metabolite is a bile salt, acetylated LDL, a glycosaminoglycan (GAG), or a glycolipid.~~

47. (Withdrawn) The method of claim 43, wherein the endogenous endogenously produced is a naturally occurring hormone ~~or cytokine.~~

48. (Withdrawn) The method of claim 43, wherein the endogenous endogenously produced substance is a nutrient.

49. (Withdrawn) The method of claim 48, wherein the nutrient is glucose, ~~or a lipid.~~

50. (Withdrawn) The method of claim 43, wherein the endogenous endogenously produced substance is an immunoglobulin, ~~a cytokine, or a hormone.~~

51. (Previously Presented) The method of claim 43, wherein the cell surface receptor is a transferrin receptor, ~~a serum albumin receptor, an asialoglycoprotein receptor, CD4, immunoglobulin Fc receptor, a fetoprotein receptor, LRP receptor, LDL receptor, or a mannose receptor.~~

52. (New) The method of claim 43, wherein the cell surface receptor is asialoglycoprotein receptor.

53. (New) The method of claim 43, wherein the cell surface receptor is adenovirus receptor.

54. (New) The method of claim 43, wherein the cell surface receptor is retrovirus receptor.

55. (New) The method of claim 43, wherein the cell surface receptor is LDLR.
56. (New) The method of claim 43, wherein the cell surface receptor is lipoprotein (a) receptor.
57. (New) The method of claim 43, wherein the cell surface receptor is LDLR-like protein (LRP) receptor.
58. (New) The method of claim 43, wherein the cell surface receptor is mannose receptor or mannose-6-phosphate receptor.
59. (New) The method of claim 43, wherein the endogenously produced substance is a bile salt.
60. (New) The method of claim 43, wherein the endogenously produced substance is an acetylated LDL.
61. (New) The method of claim 43, wherein the endogenously produced substance is a glycolipid.
62. (New) The method of claim 61, wherein the glycolipid is ceramidetrihexosidase.
63. (New) The method of claim 61, wherein the glycolipid is glucocerebrosidase.
64. (New) The method of claim 43, wherein the endogenously produced substance is a cytokine.
65. (New) The method of claim 48, wherein the nutrient is a lipid.
66. (New) The method of claim 61, wherein the subject has Gaucher disease.

67. (New) The method of claim 61, wherein the subject has Fabry disease.

68. (New) The method of claim 46, wherein the subject has Hunter Syndrome, Hurler Syndrome or Sly Syndrome.

69. (New) A method of lowering the amount of an endogenously produced substance in an extracellular fluid of a subject, comprising administering to the subject a chimeric protein comprising a functional domain and a carrier domain, wherein

the functional domain comprises a ligand-binding domain of a first receptor selected from the group consisting of a low density lipoprotein receptor (LDLR), an acetylated LDLR, a transforming growth factor β receptor, a cytokine receptor, a hormone receptor, a glucose receptor, a glycolipid receptor, and a glycosaminoglycan receptor, wherein the ligand-binding domain binds the endogenously produced substance;

the carrier domain comprises an amino acid sequence that binds a mammalian cell surface receptor other than the first receptor,

such that the chimeric protein binds to the endogenously produced substance in the extracellular fluid of the subject and to the cell surface receptor on the cell, whereupon the cell surface receptor on the cell transports the chimeric protein and the endogenously produced substance into the cell, thereby lowering the amount of the endogenously produced substance in the extracellular fluid of a subject.

70. (New) The method of claim 69, wherein the mammalian cell surface receptor is LDLR.

71. (New) The method of claim 69, wherein the mammalian cell surface receptor is transferrin receptor.

72. (New) The method of claim 69, wherein the mammalian cell surface receptor is asialoglycoprotein receptor.

73. (New) The method of claim 69, wherein the mammalian cell surface receptor is retrovirus receptor.

74. (New) The method of claim 69, wherein the mammalian cell surface receptor is lipoprotein (a) receptor.

75. (New) The method of claim 69, wherein the mammalian cell surface receptor is LDLR-like protein (LRP) receptor.

76. (New) The method of claim 69, wherein the mammalian cell surface receptor is mannose receptor or mannose-6-phosphate receptor.

77. (New) The method of claim 43, wherein the extracellular fluid is blood or lymph.

78. (New) The method of claim 69, wherein the extracellular fluid is blood or lymph.

79. (New) A method of lowering the amount of a glycosaminoglycan (GAG) in an extracellular fluid of a subject, comprising administering to the subject a chimeric protein comprising:

a functional domain comprising a ligand-binding domain of a GAG receptor, wherein the ligand-binding domain binds the GAG; and

a carrier domain comprising an amino acid sequence that binds a transferrin receptor,

such that the chimeric protein binds to the GAG in the extracellular fluid of the subject and to the transferrin receptor on the cell, whereupon the transferrin receptor on the cell transports the chimeric protein and the GAG into the cell, thereby lowering the amount of the GAG in the extracellular fluid of a subject.

80. (New) The method of claim 69, wherein the functional domain comprises a ligand-binding domain of LDLR.

81. (New) The method of claim 69, wherein the functional domain comprises a ligand-binding domain of transforming growth factor β receptor.

82. (New) The method of claim 69, wherein the functional domain comprises a ligand-binding domain of a cytokine receptor.

83. (New) The method of claim 69, wherein the functional domain comprises a ligand-binding domain of a hormone receptor.

84. (New) The method of claim 69, wherein the functional domain comprises a ligand-binding domain of a glucose receptor.

85. (New) The method of claim 69, wherein the functional domain comprises a ligand-binding domain of a glycolipid receptor.

86. (New) The method of claim 69, wherein the functional domain comprises a ligand-binding domain of a glycosaminoglycan receptor.